PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 2003P07198WO			FOR FURTHER ACTION See Form PCI		See Form PCT/IPEA/416					
International application No.			International filing da	ate (day/month/year)	Priority date (day/month/year)					
PCT/EP2004/005751			27.05.200	4	24.06.2003					
	International Patent Classification (IPC) or national classification and IPC									
Applicant BENQ CORPORATION										
	 This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 									
2. Thi	2. This REPORT consists of a total of 8 sheets, including this cover sheet.									
3. Thi	s report is also acc	companied by A	NNEXES, comprising	:						
a.	(sent to th	e applicant and	to the International Bi	ureau) a total of	sheets, as follows:					
	shee	ts of the descrip	otion, claims and/or dra	awings which have been a	amended and are the basis for this report and/or					
	sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).									
	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.									
Ь.										
j.										
	, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).									
4. Thi	s report contains i	ndications relati	ng to the following ite	ms:						
	Box No. I	Basis of the	report							
	Box No. II	Priority								
	Box No. III	Non-establi	shment of opinion witl	n regard to novelty, inven	tive step and industrial applicability					
	Box No. IV	Lack of uni	ty of invention							
	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement									
	Box No. VI Certain documents cited									
	Box No. VII Certain defects in the international application									
	Box No. VIII Certain observations on the international application									
Date of submission of the demand				Date of completion of th	nis report					
					-					
Name and mailing address of the IPEA/EP				Authorized officer						
Facsimile No.				Telephone No.						

Translation

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Box	No. I	Basis of the report							
1.		n regard to the language, this report is based on the internation cated under this item.	al application in the language in	which it was filed, unless otherwise					
	This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:								
		international search (Rule 12.3 and 23.1(b))							
		publication of the international application (Rule 12.4)							
	377:4L	international preliminary examination (Rule 55.2 and/o	,	heete which have been firmished to the					
2.	recei	With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):							
		the international application as originally filed/furnished							
	\square	the description:							
		pages <u>3-13</u>		as originally filed/furnished					
		pages* 1,1a,2	received by this Authority on	19.04.2005 by fax					
		pages*	received by this Authority on						
	\boxtimes	the claims:							
		nos. 2-8		as originally filed/furnished					
		nos.*	as amended (togethe	r with any statement) under Article 19					
		nos.* _ 1	received by this Authority on	19.04.2004 by fax					
		nos.*	received by this Authority on						
	\boxtimes	the drawings:							
		sheets 1/6-6/6		as originally filed/furnished					
		sheets*							
		sheets*	received by this Authority on						
				intima.					
		a sequence listing and/or any related table(s) - see Suppleme	emai Box Relating to Sequence L	asung.					
3.	Ш	The amendments have resulted in the cancellation of:							
		the description, pages							
		the claims, nos.							
		the drawings, sheets/figs							
		the sequence listing (specify):							
ļ		any table(s) related to sequence listing (specify):							
4.		This report has been established as if (some of) the amend they have been considered to go beyond the disclosure as fil							
		the description, pages							
		the claims, nos.							
		the drawings, sheets/figs							
		the sequence listing (specify):							
		any table(s) related to sequence listing (specify):							
*	If ite	em 4 applies, some or all of those sheets may be marked "supe	erseded."						

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Box	No. V			ticle 35(2) with regard to novelty, inventive step or industrial applicability; oporting such statement	
1.	Statement				
	Novelty (N)		Claims	2-8	YES
			Claims	1	NO
	Inventive step (IS)				• • • •
	TH VOID V	жер (10)	Claims Claims	1-8	YES NO
	Industrial applicability (IA)			1-8	
			Claims		NO
2.	Citations an	d explanations (Rule 7	0.7)		
	1	This repo	rt ma	kes reference to the following	
		documents	:		
		D1: WO 0:	2/133	07 A (ERICSSON TELEFON AB L M;	
		EGOR	OV IG	OR (SE)) 14 February 2002	
		D2: EP-A	-1 01	1 167 (MATSUSHITA ELECTRIC IND CO	
		LTD)	21 J	une 2000	
		D3: US 2	001/0	50636 A1 (WEINBERGER MARTIN)	
		13 D	ecemb	er 2001	
	2.	The amend	ments	which were submitted on 19 April	
		2005 with	the	demand for international preliminary	
		examinati	on an	d in response to the written opinion	
		of the in	terna	tional searching authority were used	
	as the		sis f	or the international preliminary	
		report on	the	patentability of the application.	
		The exami	ner h	as carefully studied the amendments	
		and the a	rgume	nts put forward by the applicant	
		concernin	g the	novelty and inventive step in the	
		current a	pplic	ation in relation to the prior art	
		and remai	ns of	the opinion that the current	
		applicati	on do	es not meet the requirements of PCT	

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement Article 33(1). The reasons are as follows: INDEPENDENT CLAIM 1 3 The present application does not meet the 3.1 requirements of PCT Article 33(1) because the subject matter of claim 1 lacks novelty (PCT Article 33(2)). Document D1 discloses (the references between parentheses refer to that document): a PIFA antenna arrangement (fig. 5) for at least two mobile telephone frequency bands (GSM/DCS; GSM/PCS) at a distance from one another, comprising a ground connection and an HF feed connection, wherein: the PIFA antenna arrangement comprises at least two strip-like antenna branches (510; 520) that run essentially side-by-side and in parallel to one another and which are connected one to the other at a base point (500) in order to serially connect the antenna branches (510; 520); the antenna branches (510; 520) extend at a predetermined distance from one another to form a slot (550); the antenna branches (510; 520) have straight sections;

the ground connection (540) is disposed on a

the HF feed connection (530) is disposed on

free end of one of the antenna branches

(510);

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

the outer edge of the antenna branch (510) of the PIFA antenna structure on which the ground connection (G) lies; and wherein the widths of the antenna branches (510; 520), the lengths of the antenna branches (510; 520) and the slot (550) between the antenna branches (510; 520) are calculated such that the PIFA antenna structure, as a result of the capacitive coupling between the antenna branches (510; 520), has two resonance frequency bands at a desired distance from one another (see page 10, line 32 - page 11, line 7).

3.2 The applicant sees the main reason for the novelty of the current application in relation to the prior art in D1 as being the fact that the PIFA antenna has two resonance frequencies at a desired distance from one another as a result of the capacitive coupling between the two branches.

It is clear, however, from the description (see page 7, lines 6-17), and from figure 2 and claim 1 (see lines 23-25), that the resonance of the PIFA antenna in two different frequencies is due not "only" to the capacitive coupling (C3 in fig. 2) between the two branches (Z2, Z2), but "also" due to the parameters W1, W2, B1, B2, T, H1 and to the distance between the ground point G and the HF feed S, or due to L1, C1, L2, C2.

The description even shows (see page 3, lines 18-

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- 22) that the capacitive coupling C3 with the inductive coupling L3 are important to the bandwidth of the resonance frequencies.
- 3.3 In addition, even if it is assumed that change to all those parameters is used only for the purpose of capacitive coupling between the branches (Z1, Z2) and results in an antenna resonance in two different frequencies, it is no different in the antenna (500) in document D1. Document D1 states clearly on page 10, line 32 to page 11, line 7, that the lengths and widths of the branches (510, 520) and the width of the slot (550) between the branches (510, 520) sets the resonance of the antenna (500) at two different frequencies.

 Reference was also made to this passage in the written opinion of the international searching authority.

It is also clear to a person skilled in the art that a slot width of 1 to 3 mm (see document D1, page 10, lines 9-11) and frequencies of 900 to 1900 MHz result in a very strong and significant capacitive coupling which contributes to the resonance frequency.

3.4 The applicant incorrectly views the prior art antenna from document D1 as a combination of a patch antenna part and a strip-like antenna part.

In interpreting the length of the antenna 500 in D1, the applicant has not considered the actually

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intended total length of the branches (510, 520), but simply the length of the branch (510), or the width (W) of the antenna (see also page 10, lines 6 and 7 together with page 13, lines 5 and 6).

If the formula $L=\lambda_1/4=3\lambda_2/4$ is taken, the length $\lambda_2/4$ would go beyond the diagonal of the "patch part".

4 DEPENDENT CLAIMS 2-8

The applicant has not put forward any argument concerning the inventive step in claims 2-8 which goes beyond the arguments indicated above relating to the novelty of claim 1.

Consequently, as before, dependent claims 2-8 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for inventive step, since claim 1 still lacks novelty and those additional features are known from document D1 in combination with document D2.

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Box No. VIII Certain observations on the international application

. . . .

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- The application does not meet the requirements of PCT Article 6 because claims 1, 5 and 6 are unclear:
- 1.2 The wording used in lines 32-36 of claim 6 is vague and unclear and leaves the reader uncertain as to the meaning of the technical features in question. As a result, the subject matter of said claim is not clearly defined (PCT Article 6).

This lack of clarity could be overcome, for example by using the wording employed in the description (page 11, lines 14-16 and page 12, lines 31-36).

1.3 The term "substantially" in claims 1 and 5 is vague and unclear. As a result, the subject matter of said claims is not clearly defined (PCT Article 6).